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Fig. 6. A front view of one of the moveable partitions; and,

Fig. 7. A side view of it. By fixing the partitions in the middle, the area is divided into four equal parts, so that the pressure or crowding of the lambs on each other is only one quarter of what it would be without the partitions; the same arrangement enables them to be taken out of the waggon commodiously, and with much less struggle.



V.—MACHINE FOR SLICING TURNIPS.

The SILVER CERES MEDAL was this Session voted to Mr. W. THOROLD, of Great Melton, near Wymondham, Norfolk, for his MACHINE FOR SLICING TURNIPS, a Model of which has been placed in the Society's Repository.

Melton, near Wymondham,

SIR;

January 9, 1827.

I BEG to offer to the notice of the Society of Arts a machine for Slicing Turnips, which I hope, upon examination, will be found worthy of their patronage.

Having this year thirty beasts at turnips, it became necessary to have a more expeditious method of slicing their food, than a simple knife, similar to a brush-maker's, which had hitherto been used: not choosing to go to the expense of an engine, I determined to try one upon a plan more simple and cheap than any which offered at the agricultural repositories. After some unsuccessful trials, a machine like the model herewith sent was the result. Its simplicity is so obvious, that a person unacquainted with the gradations between the first idea of an invention and its ultimate completion, would be unwilling to

allow that any intermediate arrangement could possibly have suggested itself ; but I beg to assure the Society, that it was not until four were made that the invention could be considered complete. It is not pretended that this machine is the most expeditious yet contrived, but its claims to superiority lie in the uniform thickness and peculiar cleanliness with which the slices are delivered ; and when it is understood that a turnip is severed at one blow, it will readily be conceded that sufficient expedition is attainable.

Machines that are intended to slice with the greatest expedition, are liable to cut the slices into wedge-like shapes, and to soil the sides of the slices, so as to render them an object of dislike to the cattle. They are also expensive and complex.

I am, Sir,

A. Aikin, Esq.

&c. &c. &c.

Secretary, &c. &c.

W. THOROLD.

Description, &c.

The model is constructed upon a scale of four inches to the foot, and in every respect is like the original, except the mallet, which in the model is of lead, but in the machine is of wood. The principal difficulty in its construction is to give the knives the proper radiation, in order that the slices may clear well ; but if too wide below, they are apt to split the turnips, instead of cutting them.

The method of using it is, first to place a skep or basket directly under the knives to catch the slices as they fall through, then to put a turnip with its root downwards upon the knives, the mallet being lifted up as high as

convenient; then bring the mallet down suddenly upon the turnip; with the model, two or three blows are necessary, but with the large one, one blow usually suffices. It has been found that sudden impulse is requisite: mere pressure will not do.

Although this machine has not been made above a month, six gentlemen and farmers have adopted it; and one machine-maker applied to me for leave to make it, which, of course, I readily granted.

If I had not considered the practical application of this machine so palpable that every member may satisfy himself with his own hands, I should have inclosed certificates from those gentlemen who use them; but, if the Society consider those certificates indispensable, I will procure them.

A. Aikin, Esq.

W. THOROLD.

Secretary, &c. &c.

As the effect of Mr. Thorold's machine could not be adequately judged of by the model, the Secretary was directed by the Committee to request Mr. Thorold to send a full-sized instrument, as well as certificates from those persons who had used it.

SIR;

Melton, January 27, 1827.

I have sent the machine last made, which is the tenth; you will perceive it is somewhat different from the model, and I hope the alterations are for the better.

Owing to the difficulty of getting a country smith to make the knives of the proper temper, I have substituted some Sheffield knives, which my man obtained at Norwich, being part of the old stock of a machine-maker;

who used to make slicing engines. Six blades are found sufficient now that they are longer.

My man is just returned with Mr. A. Beevor's certificate, and says, Mr. Beevor has applied an iron chase to guide the lever, which doubtless is advantageous.

I hope the five certificates now sent will suffice.

I am, Sir,

A. Aikin, Esq.

&c. &c. &c.

Secretary, &c. &c.

W. THOROLD.

CERTIFICATES.

Great Melton, near Wymondham, Norfolk,

January 27, 1827.

This is to certify that I have used the turnip-slicer invented by Mr. Thorold, and am of opinion, that it is the most simple and useful machine as yet made for that purpose.

(Signed)

EDWARD LOMBE.

Wymondham, January 29, 1827.

I have used one of the turnip-slicers invented by Mr. Thorold, of Melton, and consider it a more useful and simple machine than the one formerly used by me, and have adopted it in my concern.

THOMAS CANN, Jun.

Cavick House, Wymondham,

SIR;

January 26, 1827.

Your turnip-cutting machine I have great satisfaction in stating, is decidedly the best thing of the kind I have

ever seen. By it the work is most expeditiously performed, and in using it, it appears equally out of the power of the most ignorant person to injure the machine, or to slice the turnips in any manner which will present a probability of choking the cattle.

I am, Sir,

Mr. W. Thorold,
Melton.

&c. &c. &c.

W. R. CANN.

DEAR SIR;

Wymondham, January 27, 1827.

I have used the turnip-slicer invented by you for some weeks, and I have great pleasure in certifying that it fully answers the purpose. So well satisfied am I with it, that I have directed my old machine to be disused.

Several experienced farmers in my neighbourhood have seen your machine, and highly approve of it.

I am, Sir,

&c. &c. &c.

Mr. W. Thorold,

J. MITCHELL.

SIR;

Honingham Thorpe, January 27, 1827.

I have very great pleasure in complying with your wish for having my opinion of your new turnip-slicer, and am highly gratified in the opportunity of affording you my testimony of its utility as an agricultural instrument. I was soon taught to put a just value on it, for the precision and celerity with which it performed its work, in preference to any thing I had ever used before. I have this year sixteen bullocks at turnips, ten tied up, and six in the yard; a stout girl cuts turnips for them, and attends them wholly, and has a good deal of time to spare, which was not the case before I got your slicer. I am fully

justified in saying, the same girl is perfectly equal, with the same instrument, to cut turnips for, and attend, at least, thirty bullocks, so very expeditiously is the cutting performed.

I am, Sir,

&c. &c. &c.

Mr. W. Thorold.

ARTHUR BEEVOR.

In the first experiment tried before the Committee with Mr. Thorold's machine, the turnips made use of were the common white ones; and though it succeeded perfectly well in slicing these, it was suggested that, as the Swedish turnip is harder than the common white one, it would be expedient to make a trial with some of these also. A parcel of Swedish turnips, which had become rather tough by having been out of the ground for several days, was procured, and an experiment being tried on these, it was found that they were sliced very completely and accurately by the instrument, being in general driven through the knives by the first blow of the mallet.

Reference to the Engraving.—Plate X.

Fig. 9. A perspective view of the machine. It consists of a bench, *q r*, cut asunder, and the parts separated eight inches; this space is occupied, and the portions of the bench are united by the frame which contains the knives, the two outer ones, *s s*, being stouter and longer than the rest, in order that bolts may go through the lengthened ends and through the two parts of the bench, *q* and *r*, to hold them firmly together; *t*, a wooden block or mallet, grooved at top to fit on the lever *v v*,

which is secured in it by two staples, *u u*; the other end is *r* shaped, having pivots which turn in the two standards *w w*; the block *t* is so placed as to fall exactly on the knives, as shown by dotted lines.

Fig. 10 is an end view of the mallet *t*, showing the grooves in the under face over each knife; the knives below it are in section. The position of the knives is such, that they radiate from a point seven inches above them, and are a full inch apart; so that while the backs are left sufficiently strong, the space between them is a little wider than at the cutting edge; by this arrangement the slices of turnip fall easily through, without sticking, and as the face of the mallet projects between the knives, the turnips are thrust completely past the cut, and drop through into the basket.

Fig. 11 shows the perforated plate which holds the knives against the portion of the bench *q*; it has two pins *x x*, which fit in holes in the outside knives *s s*.

Fig. 12 shows the other perforated plate, which screws against the portion *r* of the bench; the ends of the knives are shown as coming through; they have holes through which the wire *y y* passes, in order to steady them; a similar wire goes through the other end of the knives, behind the plate *x x*.

Fig. 13 shows one of the interior knives, separate, with a hole at each end, for the wires *y y*.

Fig. 14 is a bird's-eye view of the knives, plates, and bolts, framed together; the portions *q* and *r* of the bench being indicated by dotted lines. The plate, fig. 12, has three holes, for the three bolts shown by dotted lines *z z z*, fig. 14, which secure it to the end *r* of the bench. The figs. 10, 11, and 12 are one tenth of the real size, and figs. 13 and 14 one thirteenth part, and fig. 9 one twentieth part.